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EXAMINER

JORGENSEN, LELAND R

ART UNIT	PAPER NUMBER
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2675

DATE MAILED: 05/09/2003

14

Please find below and/or attached an Office communication concerning this application or proceeding.

14

Office Action Summary

Application No.

09/508,567

Applicant(s)

PESACH, BENNY

Examiner

Leland R. Jorgensen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 January 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 - 32 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1 - 32 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 1.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. In view of the amendment and arguments filed 6 January 2003, examiner withdraws the 35 USC 112, second paragraph, rejection to claims 1 – 29.

Response to Amendment

2. The amendment filed 6 January 2003 is objected to under 35 U.S.C. 132 because it introduces new matter into the disclosure. 35 U.S.C. 132 states that no amendment shall introduce new matter into the disclosure of the invention. The added material which is not supported by the original disclosure is as follows:

Claim 31 (new) describes, "A device for displaying an image with an illusion of depth according to claim 1 and wherein said device is a credit card." The specification mentions credit cards only twice. The first states, "Small format advertising and graphic effects, such as used on credit cards,..., would greatly benefit from such an invention." Specification, page 5, lines 8 – 10. The second states, "There is still further provided ..., a device...for small area use such as in credit cards." Specification, page 10, line 11 – 14. Neither describes the device as a credit card, only as placed on or in a credit card.

Applicant is required to cancel the new matter in the reply to this Office Action.

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Claim Rejections - 35 USC § 102

3. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

4. Claims 1, 2, 10, 11, 14, and 29 are rejected under 35 U.S.C. 102(b) as being anticipated by McCurry, R. E., "Three-Dimensional Displays Utilizing Multiple Source Moire Patterns," IBM Technical Disclosure Bulletin, Apr. 1966, vol. 8, No. 11, pp. 1578-1579.

Claim 1

McCurry teaches using moiré patterns to display information in a form having depth.

McCurry teaches a first surface, labeled view grid 2, which has a planar horizontally periodic array of transparent holes or slits in an otherwise opaque sheet of material. It is inherent that periodic array would form an image. That the image is formed of holes or slit is immaterial. An image may be created by the cutting away of negative space as well as by a positive impression. A stone or wood carving is an image formed by cutting away negative space. In fact, amended claim 1 states that the "...image is modulated by a first pattern of substantially transparent features..."

McCurry teaches a second surface, labeled source surface 1, which has at least part of its surface printed with a predetermined pattern of substantially periodic features.

McCurry teaches that view grid is intermediate an observer and the source surface.

McCurry teaches that wherein the period of the second pattern has a "slightly different period" from the period of the first pattern.

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McCurry teaches the surfaces being spaced apart by a distance d considerably larger than the period of the features. McCurry, figure.

McCurry teaches that the spacing of the surfaces is varied in a predetermined manner such that the interaction of the two patterns produces a Moire image exhibiting continuous three dimensional visual effects when viewed from the view grid side of the device.

Claim 2

McCurry teaches grating lines.

Claim 10

The device taught by McCurry can be viewed by the observer's naked eye without the need for any special viewing aids such as special spectacles.

Claim 11

McCurry teaches that the two surfaces are interchangeable, thus since the one surface is transparent, the other must also be transparent in order for the two surfaces to be interchangeable.

Claim 14

McCurry shows in figure 1 that the spacing of the surfaces is about 5 times the pattern period.

Claim 29

McCurry teaches using moiré patterns to display information in a form having depth.

McCurry teaches a first surface, labeled view grid 2, which has a planar horizontally periodic array of transparent holes or slits in an otherwise opaque sheet of material. It is inherent that periodic array would form an image. That the image is formed of holes or slit is immaterial.

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An image may be created by the cutting away of negative space as well as by a positive impression. A stone or wood carving is an image formed by cutting away negative space. In fact, amended claim 1 states that the "...image is modulated by a first pattern of substantially transparent features..."

A second surface, labeled source surface 1, has at least part of its surface printed with an image having a predetermined pattern of substantially periodic features.

McCurry teaches the surfaces being spaced apart by a distance d considerably larger than the period of the features. McCurry, figure.

McCurry teaches that the spacing of the surfaces is varied in a predetermined manner such that the interaction of the two patterns produces a Moire image exhibiting continuous three dimensional visual effects when viewed from the view gird side of the device.

Claim Rejections - 35 USC § 103

5. Claims 3 – 4, and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over McCurry in view of Drinkwater, USPN 5,694,229.

Claim 3

McCurry does not teach that the features are shifted horizontally with respect to each other in different horizontal bands of the patterns, to produce images with varying vertical detail.

Drinkwater teaches shifting the image horizontally to produce images with varying vertical detail. Drinkwater, col. 1, lines 34 – 58; col. 2, lines 17 – 64.

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It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the teachings of Drinkwater with the moiré image display of McCurry. Drinkwater invites such combination, by teaching.

These constraints mean that as the viewer changes parallax looking at different viewing positions in the hologram the viewer sees no change in the relative positions of the patterns vertically (i.e. perpendicular to the Benton slit) so that as the view position moves along the Benton rainbow slit (i.e. parallax changing) the moiré pattern changes in form dramatically, whilst retaining the same original horizontal line of symmetry for all view points. This special constraint provides a visually simple and very distinctive moiré pattern with a simple and characteristic variability on tilting making the resulting effect very suitable and effective as a public recognition security device. The other advantage is that this constraint also involves a very particular relative geometry of pattern symmetry lines and Benton hologram rainbow slit (i.e. they must lie in the same plane). The moiré pattern will be sensitive in its form to any small changes in vertical position (i.e. going out of the plane of geometry) and even small changes from this geometry should cause a relatively large change in the form of the moiré pattern and in particular will cause the line of symmetry of the pattern to tilt dramatically away from the horizontal symmetry. This therefore makes reorigination very difficult because of the particular geometries and line forms required and also makes the pattern easy to authenticate as small changes from the defined required geometry should fairly dramatically alter the form of the moiré pattern making it very difficult to reproduce. The pattern itself is generally also of a highly recognizable form as it retains a horizontal line of symmetry as parallax is altered.

Drinkwater, col. 2, lines 36 – 64.

Claim 4

Drinkwater suggests that in a substantially vertical direction, the variation of the period of at least part of at least one of the patterns takes place in a substantially horizontal direction.

Drinkwater, col. 1, lines 34 – 58.

Claim 28

McCurry does not specifically teach that the device is constructed and operative for small area use in credit cards.

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Drinkwater teaches a moiré pattern that is constructed and operative for small area use in credit cards. Drinkwater, col. 1, lines 9 – 11, 34 – 44.

It would have been obvious to one of ordinary skill in the art at the time of the invention to use the moiré image device of McCurry with the moiré pattern of Drinkwater constructed and operative for small area use such as in credit cards. Drinkwater invites such by teaching the following advantages.

The moiré effect techniques detailed above are designed to protect a security display hologram from counterfeit by direct reorigination by making reproduction of the image very difficult. For such security holograms it would also be advantageous to protect them from so called contact copying. ... Both of these techniques which degrade contact copies could usefully be used in an additional and subsidiary embodiment of this invention to produce a hologram well protected against counterfeit by use of the moiré technique and well protected against contact copying and remastering by use of a substrate or component layer designed to produce interference or polarization rotation effects under laser illumination.

Drinkwater, col. 11, lines 16 – 52.

6. Claims 5, and 18 – 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over McCurry in view of Cohen, USPN 4,889,421.

Claim 5

Claim 5 adds that the views of the image as seen by each of an observer's two eyes are mutually displaced in such a way as to exhibit realistic three dimensional effects by means of the static parallax effect.

McCurry alludes to but does not specifically describe a parallax effect.

Cohen describes the parallax effect in the moiré pattern. Cohen, col. 4, lines 54 – 62.

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It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the parallax effect of Cohen with the display device of McCurry. Cohen teaches,

The moiré effect may be used to give a shimmering or glittering illusory mental image with movement and depth by virtue of parallax due to the physical separation of the two grid pattern layers. This phantasm of movement and depth can achieve startling visual effects. Moreover, the combination of motion, depth, and parallax that is provided by the grid patterns in the grid pattern layers provides a constantly changing, aesthetically pleasing pattern to the observer. When the grid patterns are provided in different colors, the resulting moiré effect is seen as striking and unusual color patterns appearing both natural and lifelike or both unnatural and artificial. In any case, the appearance achieved is unique.

Cohen, col. 4, line 63 – col. 5, line 8.

Claim 18

Cohen teaches that the two surfaces are disposed on the opposite sides of a transparent plate. Cohen, col. 9, lines 8 – 14; and figures 7a, 8c, and 10c.

Claim 19

Cohen teaches that the first surface is disposed on one side of a transparent plate, and the second surface is a thin printed layer disposed close to the second side of the plate. Cohen, col. 9, lines 8 – 14; col. 10, lines 38 – 47; col. 12, lines 7 – 27; and figures 7a and 10c.

Claim 20

Cohen teaches that both surfaces are thin printed layers disposed on both sides of a plate. Cohen, col. 9, lines 8 – 14; col. 12, lines 7 – 27; and figure 7a.

7. Claims 6 - 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over McCurry in view of Eaves, USPN 3,811,213.

Claim 6

McCurry does not specifically teach that the appearance of the image changes with change in the position of a viewer in such a way as to exhibit realistic three dimensional effects by means of the motion parallax effect.

Eaves teaches a motion parallax effect. Eaves, col. 1, lines 13 – 17; col. 15, lines 3 – 9.

It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the motion parallax effect of Eaves with the moiré display device of McCurry. Eaves teaches,

By way of some general information it should perhaps be noted that moiré patterning has been well known for many years. In some instances moiré patterns have been deliberately created to produce desired effects. At one time moiré patterned fabrics were quite popular. Also, the lenticular devices discussed above make use of a type of moiré patterning. In other situations, however, for example, such as in half-tone printing, moiré patterns may be inadvertently generated and have to be eliminated or avoided.

Eaves, col. 1, lines 58 – 67. Eaves adds,

In the present invention highly effective illusions of motion and depth are created through the use of printed, i.e., essentially flat two-dimensional, dot patterns which are overlaid or interacted in a plurality of different frequencies and angular relationships for cooperative effects to produce moiré patterns of light and dark areas. The dot patterns are formed on transparent sheets or films, and standard techniques in the printing and graphic arts industries can be employed for formation of the dot patterns. Motion illusion is accomplished through the use of two sheets of dot patterns. ... Movement of the activator sheet with respect to the art sheet causes changes in the positions of the light and dark areas of the moiré patterns and thus very effective illusion of motion can be created by appropriate selection of relative dot pattern frequencies and angular relationships.

Eaves, col. 2, lines 18 – 54.

Claim 7

Eaves teaches that the size of the feature changes with the apparent depth in such a way as to comply with the mind's perception that distant objects appear to have narrower details and close objects have wider details. Eaves, col. 2, lines 55 – 64; col. 13, line 57 – col. 14, line 37.

Claim 8

It is inherent that to the device described by McCurry and Eaves that the size of the feature changes with the apparent depth in such a way as to comply with the geometric perspective effects that features on a tilted surface appear narrower than those on a flat surface by approximately the cosine of the tilt angle. See Eaves, col. 13, line 57 – col. 14, line 37; col. 15, lines 3 – 19.

Claim 9

Eaves teaches that the brightness of features of the moiré image changes with the apparent depth in such a way as to comply with any other desired lighting effect. Eaves, col. 2, lines 55 – 64; col. 13, line 57 – col. 14, line 37.

8. Claims 12, 13, 15 – 17, 21, 24 – 27, and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over McCurry in view of McGarvey, USPN 5,586,089.

Claim 12

McCurry does not specifically teach that the second surface is translucent.

McGarvey teaches a moiré device where the second surface is translucent. McGarvey, col. 7, lines 51 – 55.

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It would have been obvious to one of ordinary skill in the art at the time of the invention to use a moiré device with a translucent surface as taught by McGarvey with the moiré image device of McCurry. McGarvey invites such combination, teaching, "Somewhat translucent pigments will act as color filters when rear illuminated, creating an effect similar to that of stained glass." McGarvey, col. 7, lines 53 – 55. McGarvey adds,

This invention uses moiré pattern design displacement in the form of rotation, to produce composite images. The effects and images produced are dependent on pattern design and speed of rotation. With certain moiré pattern designs, cancellation patterns can produce cycles of multiple, changing, moving or otherwise animated images. The effect of illusion of motion, in which virtual images that move at various speeds or even appear to change speeds during a cycle of an effect is one example. Specific types of moiré pattern composites possess unique visual properties, such as inverse imaging, component magnification and separate composite shape production.

McGarvey, col. 4, lines 34 – 45.

Claim 13

McGarvey teaches that the second surface may be opaque. McGarvey, col. 7, lines 51 – 53.

Claim 15

McGarvey teaches both surfaces having the same color. McGarvey, col. 7, lines 26 – 50.

Claim 16

McGarvey teaches that the image printed with patterns of different color. McGarvey, col. 7, lines 26 – 50.

Claim 17

McGarvey teaches a third background color. McGarvey, col. 7, lines 26 – 50.

Claim 21

McGarvey teaches a first surface is disposed on one side of a transparent plate, the second surface is disposed on one side of another plate, the plates being disposed at a fixed distance from each other such that the surfaces are spaced from each other by a predetermined distance. McGarvey, col. 4, lines 15 – 24; and figures 1 and 3.

Claim 24

McGarvey teaches that the device is illuminated from the rear. McGarvey, col. 8, lines 23 – 33.

Claim 25

McGarvey teaches an embodiment where the device is illuminated from the front by natural light and by ultraviolet light. McGarvey, col. 7, lines 38 – 43; col. 8, lines 34 – 36, 42 – 46.

Claim 26

McGarvey teaches an embodiment where the device is illuminated from at least one of its edges by ultraviolet light. McGarvey, col. 8, lines 34 – 36.

Claim 27

McGarvey teaches a moiré device that is constructed and operative for large area use. McGarvey, col. 1, lines 7 – 10; col. 3, lines 45 – 49.

Claim 30

McGarvey teaches a moiré device that is a billboard. McGarvey, col. 1, lines 7 – 10; col. 3, lines 45 – 49.

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9. Claim 22 is rejected under 35 U.S.C. 103(a) as being unpatentable over McCurry in view of Roche et al., USPN 5,384,999.

Claim 22

Claim 22 adds that at least one of the first and second surfaces is constructed of wire netting.

Although McCurry teaches a view grid, McCurry does not specifically teach a wire netting.

Roche teaches a wire mesh to form moiré patterns on a display. Roche, col. 1, lines 51 – 54; col. 3, lines 3 – 5; and col. 4, lines 13 – 16.

It would have been obvious to one of ordinary skill in the art at the time of the invention to use the wire mesh of Roche with the moiré display device of McCurry. Roche invites such combination, teaching, “Furthermore, the wire mesh or other apertured material 14 can be contoured such that various moiré patterns may be formed on its surface, depending on the user's preference and the incident light.” Roche, col. 4, lines 13 – 16.

10. Claim 23 is rejected under 35 U.S.C. 103(a) as being unpatentable over McCurry in view of Witkowski, USPN 5,525,383.

Claim 23

McCurry does not teach that either or both of the surfaces are flexible and can be rolled on a cylinder.

Witkowski teaches a moiré image that is on a flexible surface that can be rolled on a cylinder. Witkowski, col. 2, lines 33 – 47; col. 7, lines 42 – 53; and figure 12.

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It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the flexible moiré surface of Witkowski with the moiré display device of McCurry.

Witkowski invites such, teaching,

Container displays that are now in use are limited in their ability to attract one's attention. It is therefore one important objective of the invention to provide a container that is particularly well suited for use as a beverage or product container which is able to display transitory moving images to attract the attention and interest of the user e.g., as a retail beverage container such as a standard beverage can for beer or soda pop as well as for use as a plastic beverage bottle such as a 12-ounce or 2-liter beverage bottle of the type sold at retail outlets and is also adaptable for use as a cup, mug or sports bottle for holding a beverage. In order to be acceptable, the container must be very inexpensive to produce, must have excellent attention-getting qualities, must be easy to use and must be durable enough to stay in good condition for a reasonable period of use.

Witkowski, col. 1, lines 14 – 28. Witkowski adds,

One specific object of the invention is to provide a beverage or food container or vessel for displaying transitory or animated images through the use of a movable sleeve with a provision for reliably retaining the sleeve in place on the container, i.e., prevent it from accidentally falling off either before or during use.

Witkowski, col. 1, lines 44 – 49.

11. Claims 28, 31, and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over McCurry in view of Amidror et al., USPN 6,249,588 B1.

Claims 28, 31, and 32

McCurry teaches a device for displaying an image with an illusion of depth. McCurry teaches a first surface, labeled view grid 2, which has a planar horizontally periodic array of transparent holes or slits in an otherwise opaque sheet of material. It is inherent that periodic array would form an image. That the image is formed of holes or slit is immaterial. An image may be created by the cutting away of negative space as well as by a positive impression. A

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stone or wood carving is an image formed by cutting away negative space. In fact, amended claim 1 states that the "...image is modulated by a first pattern of substantially transparent features..."

McCurry teaches a second surface, labeled source surface 1, which has at least part of its surface printed with a predetermined pattern of substantially periodic features. McCurry teaches that view grid is intermediate an observer and the source surface. McCurry teaches that wherein the period of the second pattern has a "slightly different period" from the period of the first pattern. McCurry teaches the surfaces being spaced apart by a distance d considerably larger than the period of the features. McCurry, figure. McCurry teaches that the spacing of the surfaces is varied in a predetermined manner such that the interaction of the two patterns produces a Moire image exhibiting continuous three dimensional visual effects when viewed from the view grid side of the device.

McCurry does not specifically teach that the device is constructed and operative for small area use in credit cards.

Amidror teaches a moiré pattern that is constructed and operative for small area use in credit cards. Drinkwater, col. 1, lines 13 – 17, 25 – 44.

It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the credit cards having a moiré pattern as taught by Amidror with the display device taught by McCurry. Amidror invites such combination by teaching,

The present invention is concerned with providing a novel security element and authentication means of enhanced security for banknotes, cheques, credit cards, travel documents and the like, which is even more difficult to counterfeit than present banknotes and security documents.

Amidror, col. 1, lines 12 – 17. Amidror concludes,

The present invention completely differs from methods previously known in the art which use moiré effects for the authentication of documents. In such existing methods, the original document is provided with special patterns or elements which when counterfeited by means of halftone reproduction show a moiré pattern of high contrast. Similar methods are also used for the prevention of digital photocopying or digital scanning of documents. In all these previously known methods, the presence of moiré patterns indicates that the document in question is counterfeit. However, the present invention is unique inasmuch as it takes advantage of the intentional generation of a moiré pattern having a particular intensity profile, whose existence and whose shape are used as a means of authentication of the document. The approach on which the present invention is based further differs from that of prior art in that it not only provides full mastering of the qualitative geometric properties of the generated moiré (such as its period and its orientation), but it also permits to determine quantitatively the intensity levels of the generated moiré.

The fact that moiré effects generated between superposed dot-screens are very sensitive to any microscopic variations in the screened layers makes any document protected according to the present invention practically impossible to counterfeit, and serves as a means to easily distinguish between a real document and a falsified one.

A further important advantage of the present invention is that it can be used for authenticating documents printed on any kind of support, including paper, plastic materials, etc., which may be transparent or opaque. Furthermore, the present invented method can be incorporated into the standard document printing process, so that it offers high security at the same cost as standard state of the art document production.

Amidror, col. 18, lines 20 – 52.

Response to Arguments

12. Applicant's arguments filed 6 January 2003 have been fully considered but they are not persuasive.

In a prior action, examiner rejected claims 1 – 29 as either anticipated by McCurry, R. E., "Three-Dimensional Displays Utilizing Multiple Source Moire Patterns," IBM Technical Disclosure Bulletin, Apr. 1966, vol. 8, No. 11, pp. 1578-1579, or obvious in view of McCurry in

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combination with other art. In response, applicant amended claims independent claims 1 and 29 as well as several other claims and added new claims 30 – 32. Applicant argued that the amended claims 1, 29, and new claim 32 overcame the rejection since, “In D1 [McCurry] only the first surface is indicated as having the image thereon. The second surface is a ‘view grid’ ... ‘in the form of a planar horizontally period array of transparent holes or slits in an otherwise opaque sheet of material.’ None of the other prior art documents cited by Examiner teaches an image on both a first and second surface.” Amendment, page 5.

Examiner agrees that McCurry teaches a view grid 2 which has a planar horizontally periodic array of transparent holes or slits in an otherwise opaque sheet of material. It is inherent, however, that periodic array would form an image. That the image is formed of holes or slits is immaterial. An image may be created by the cutting away of negative space as well as by a positive impression. A stone or wood carving is an image formed by cutting away negative space. In fact, amended claim 1 states that the “...image is modulated by a first pattern of substantially transparent features...”

During examination, the claims must be interpreted as broadly as their terms reasonably allow. This means that the words of the claim must be given their plain meaning unless applicant has provided a clear definition in the specification. The words in a claim are generally not limited in their meaning by what is shown or disclosed in the specification. It is only when the specification provides definitions for terms appearing in the claims that the specification can be used in interpreting claim language. MPEP 2111.01.

As used in the claims, the term “image” is ambiguous. It is unclear whether the term image refers to the resultant image formed from a first pattern on the first surface and a second

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pattern on the second surface, or whether the first pattern is an image and the second pattern is substantially the same image. The specification uses the term both ways. Compare specification page 13, lines 4 –8 with page 12, lines 26 – 28 and page 14, lines 10 – 13, 22 – 24. If the term is used for the resultant image with a portion of the image formed on the first surface and a portion on the second surface, then McCurry anticipates claim 1. If the term is used as two nearly identical images, with the first image on the first surface and a second image on the second surface, then see McGarvey's concentric squares 52 on plates 12, 14, and 16 in figure 1; Oster, G., and Nishijima, Y., "Moiré Patterns," Scientific American, May 1963, pp. 60 and 61; or Drinkwater et al.'s pair of line pattern objects 3 and 4 comprising sets of concentric figures in figure 1.

Applicant also argued that it would not have been obvious to combine Drinkwater with McCurry to use McCurry's moiré patterns on credit cards. Specifically applicant argues,

Applicants suggest that simply extolling the advantages of Moiré patterns for use in credit cards does not provide impetus for using a particular method, such as that of Drinkwater, for generating the Moiré patterns. Drinkwater in fact teaches away from using the methods of McCurry by teaching generating Moiré patterns in a manner totally different from the manner in which McCurry generates the Moiré patterns. Holograms, such as those typically used in credit cards are generated optically as a pattern of ridges and depression on a *single surface* of a suitable material and are well known for their applicability to small and even microscopic areas. Drinkwater cannot be understood to suggest replacing a single surface technique known to be suitable to small areas with a two surface technique that requires that the surfaces be separated from each other.

Amendment, page 6. Drinkwater, however, teaches,

In one arrangement, the moiré pattern itself is recorded in the holographic device by utilizing transparencies incorporating the respective arrays. In another approach, the arrays themselves may be recorded individually through slits in the holographic device so that when illuminated they are generated in different planes and at predetermined offsets so that the moiré pattern is generated as the hologram is viewed.

Drinkwater, col. 3, lines 3 – 9. Thus, Drinkwater does teach, in one arrangement, using two surfaces to generate the moiré pattern. See Drinkwater, figure 1. Drinkwater then takes a holographic picture of the surfaces and the holographic picture is incorporated into the credit card.

Claim 28 (amended) reads, “A device for displaying an image with an illusion of depth according to claim 1 and wherein said device is constructed and operative for small area use in credit cards.” The specification only provides in passing a brief mention of the use of the device in credit cards. Specification, page 5, lines 8 – 10 and page 10, lines 11 – 14. Nothing in the specification or in the phrase “device is constructed and operative for small area use in credit cards” excludes the use of holographic image of the device described in claim 1 for the credit cards. In addition, see discussion of claims 28, 31, and 32 above which have an additional grounds for rejection.

Conclusion

13. THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

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however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

14. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Sekiguchi, USPN 5,197,886, teaches a display using moiré effects. Sekiguchi, col. 13, lines 9 – 23. Sekiguchi specifically discusses the use of a billboard.

McGrew, USPN 5,396,559; Tanaka et al., USPN 5,437,897; Lee, USPN 5,909,313; Shiang et al., USPN 4,921,278; and Drinkwater, USPN 5,712,731, each teach a moiré image on a credit card.

15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Leland Jorgensen whose telephone number is 703-305-2650. The examiner can normally be reached on Monday through Friday, 7:00 a.m. through 3:30 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steven J. Saras can be reached on 703-305-9720.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks
Washington, D.C. 20231

or faxed to:

(703) 872-9314 (for Technology Center 2600 only)

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA, Sixth Floor (Receptionist).

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office, telephone number (703) 306-0377.

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A handwritten signature in black ink, appearing to read "Steven Saras", written in a cursive style.

STEVEN SARAS
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600